

CLAIMS

1. A paper feed roller for feeding paper, comprising:

a hollow pipe member forming a paper feed portion for feeding paper, and a pair of shaft members fastened concentrically on to both end portions of the pipe member,

wherein said pipe member comprises a steel pipe, a coating layer made from a synthetic resin for covering an outer surface of the steel pipe, and a synthetic resin friction coating layer containing hard particles formed on an outer surface of the coating layer.

2. A paper feed roller for feeding paper, comprising:

a hollow pipe member forming a paper feed portion for feeding paper,

wherein said pipe member comprises a steel pipe, a coating layer made from a synthetic resin for covering an outer surface of the steel pipe, and a synthetic resin friction coating layer containing hard particles formed on an outer surface of the coating layer.

3. A paper feed roller according to claim 1 or 2, wherein the outer surface of said coating layer is machined smoothly, after which said synthetic resin friction coating layer is formed on the outer surface of the coating layer.

4. A paper feed roller according to claim 3, wherein said pipe member is fabricated using a steel pipe coated with said coating layer as material.

5. A method of fabricating a paper feed roller for feeding paper, comprising:

a first step in which a steel pipe covered with a synthetic resin coating layer is prepared as material for a hollow pipe member forming a paper feed portion for feeding paper, and a pair of shaft members to be fastened on to both end portions of the pipe member are prepared;

a second step in which the pair of shaft members are fastened on to the both end portions of the steel pipe covered with said coating layer, and then at least a part of outer surfaces of said shaft members and an entire outer surface of said coating layer are machined smoothly; and

a third step in which a synthetic resin friction coating layer containing hard particles is formed on the outer surface of said coating layer.

6. A method of fabricating a paper feed roller for feeding paper, comprising:

a preparation step in which a steel pipe covered with a synthetic resin coating layer is prepared as material for a hollow pipe member forming a paper feed portion for feeding paper;

a machining step in which an entire outer surface of said coating layer is machined smoothly;

an adhesive application step for applying a UV curing type adhesive on the outer surface of said coating layer;

a particle adhering step in which a large number of hard particles are dispersed in and adhered substantially evenly to the UV curing type adhesive adhered to the outer surface of said coating layer; and

an adhesive curing step in which ultraviolet radiation is applied to the UV curing type adhesive having said hard particles adhered thereto to cure the UV curing type adhesive, and to form a synthetic resin friction coating layer containing the hard particles on the outer surface of said coating layer.

7. The method of fabricating a paper feed roller according to claim 6, wherein a pair of shaft members to be fastened to both end portions of said pipe member are prepared in said preparation step, and after fastening the pair of shaft members on to the both end portions of said steel pipe, the entire outer surface of said coating

layer is machined in said machining step.

8. The method of fabricating a paper feed roller according to claim 7, wherein at least a part of outer surfaces of the shaft members fastened on to said steel pipe is machined smoothly in said machining step.